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EXAMINER	
HENNING, MATTHEW T	

ART UNIT	PAPER NUMBER
2131	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)
	09/888,316	VOLPERT, THOMAS R.
	Examiner	**Art Unit**
	Matthew T. Henning	2131

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 20 July 2007.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1,3,5-10,21-23,25-45,47-60 and 62 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1,3,5-10,21-23,25-45,47-60 and 62 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 22 June 2001 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

This action is in response to the communication filed on 7/20/2007.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/20/2007 has been entered.

Response to Arguments

Applicant's arguments filed 7/20/2007 have been fully considered but they are not persuasive.

The examiner notes that although the amendments to the claims are not in compliance with 37 CFR 1.121, as they do not show markings indicating each and every change to the claim language, the examiner has decided to act on the claims in the interest of furthering prosecution.

Regarding the applicants arguments pertaining to the newly added claim limitations, the examiner has pointed out specifically where these limitations can be found in the prior art rejections below. Furthermore, specifically, De Maine disclosed generating an order code associated with the determined order (See De Maine Col. 92 Lines 5-10, Type 2 codes), the respective order of bit combinations of the order code defining control code segments (Type 2 codes) (See De Maine Col. 101 Lines 52-68 and Col. 102 Lines 11-15); generating a position code using the order code in cooperation with a position code routine (SANPAKC Type 2)

associated with the order code to determine positions of each of the 2^n different configurations of n bits in an input data string by comparing the 2^n different configurations of the input data string with a first one of the control code segments of the order code to identify the 2^n different configurations of the input data string which correspond to the first one of the control code segments (See De Maine Col. 101 Lines 10-74), comparing additional ones of the control code segments in a serial fashion to previously unidentified ones of the 2^n different configurations of the data string (See De Maine Col. 102 Lines 11-50) correspondences to the control code segment comparisons resulting in output values dictated by the position code routine which defines the generated position code (See De Maine Col. 92 Lines 31-39, Bit Map). This is further supported by Fig. 1 of De Maine. Therefore, the examiner does not find the arguments persuasive.

All objections and rejections not set forth below have been withdrawn.

Specification

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: In this case, the specification fails to provide proper support for the following claim limitations: "the respective orders of bit combinations of each control code defining control code segments"; "2^n different configurations of the input data string"; "comparing the 2^n different configurations of the input data string with one of the control code segments"; or "identifying the 2^n different configurations of the input data string which correspond to the first one of the control code segments". See the rejection of the claims under 35 USC 112 1st paragraph below.

Claim Objections

Claims 1,3,5-10,21-23,25-45,47-60 and 62 are objected to because of the following informalities:

Each independent claim recites "the 2^n different configurations **of the of the** input data", which recites "of the" twice in a row.

Each independent claim recites the limitation "**the** 2^n different configurations of the input data string" which lacks antecedent basis in the claim. For purposes of searching prior art the examiner will assume this was meant to read "2^n different configurations of the input data string".

Claims 25-45 are further objected to because they recite dependency to the method of claim 23, but claim 23 is directed towards a computer readable medium.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1,3,5-10,21-23,25-45,47-60 and 62 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In this case, each independent claim recites the following limitations: "the respective orders of bit combinations of each control code defining

control code segments"; "2^n different configurations of the input data string"; "comparing the 2^n different configurations of the input data string with one of the control code segments"; or "identifying the 2^n different configurations of the input data string which correspond to the first one of the control code segments", each of which is not properly supported by the specification.

Regarding the limitation that "the respective orders of bit combinations of each control code defining control code segments", the examiner has studied pages 15-17 of the specification (which were cited by the applicant as providing support for the most recent amendments), and has found no recitation of "control code segments", let alone that they are defined by the respective orders of bit combinations of each control code. Further, the examiner has been unable to find support for this limitation anywhere else in the specification.

Regarding the limitation of "2^n different configurations of the input data string", the examiner has studied pages 15-17 of the specification (which were cited by the applicant as providing support for the most recent amendments), and has found no support therein, or anywhere in the remainder of the specification, for there being 2^n different configurations of the input data string, or even of providing any different configurations of the input data string. This claim limitation appears to be directed at rearranging the input data string, for which the examiner is unable to support within the specification.

Regarding the limitation of "comparing the 2^n different configurations of the input data string with one of the control code segments", the examiner has studied pages 15-17 of the specification (which were cited by the applicant as providing support for the most recent amendments), and has found no support for configuring the input data string in different ways,

for control code segments, or for comparison between the two. The examiner has further been unable to find support for these limitations elsewhere within the specification.

Regarding the limitation of "identifying the 2^n different configurations of the input data string which correspond to the first one of the control code segments", the examiner has studied pages 15-17 of the specification (which were cited by the applicant as providing support for the most recent amendments), and has found no support for configuring the input data string in different ways, for control code segments, or for identifying which of these match. The examiner has further been unable to find support for these limitations elsewhere within the specification.

Because the applicants have failed to show where proper support for these limitations can be found in the specification, and because the examiner is unable to find proper support in the specification, it is clear that one of ordinary skill in the art would be unable to determine whether the applicants were in possession of the invention as claimed at the time of application. Therefore, the claims are rejected for failing to meet the written description requirement of 35 USC 112 1st Paragraph.

The examiner notes that the specification would provide support for claim language such as "identifying which n-bit segments of the input data string correspond to a first n-bit segment within the control code", but this has not been claimed. The examiner urges the applicants to carefully consider this, as well as the current claim language prior to filing a response to this office action.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 23, 25-45 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims are directed to a "computer readable medium including computer program instructions" Appellant's specification provides no indication as to the limitations of a "computer readable medium". As such, it is reasonable to interpret that the applicants meant to include transmission media, such as carrier waves, within the scope of this limitation. Therefore, it is believed that the medium would reasonably be interpreted by one of ordinary skill as the abstract idea of any portion of a communication, including the forms of energy, *per se*, used in communications. Absent recitation of the hardware, the claims appear devoid of any physical articles or objects which may cooperate to achieve some function, and as such are not directed to a machine. Likewise, absent any such physical article or object, they cannot be directed to a manufacture. They are clearly not a series of steps or acts themselves, and as such are not a process. They are clearly not a composition of matter. Therefore, the claims in question do not appear to fall within a statutory category of invention as set forth in 35 USC 101.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3, 5, 8-10, 21-23, 25-26, 29-40, 44-45, 47-55, 59, 60, and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Maine et al. (US Patent Number 3,656,178) hereinafter referred to as De Maine, and further in view of Cellier et al. (US Patent Number 5,884,269) hereinafter referred to as Cellier, and further in view of Witten et al. ("On the Privacy Afforded by Adaptive Text Compression") hereinafter referred to as Witten.

Regarding claim 1, De Maine disclosed a method of encrypting an input data string including a plurality of bits of binary data with a processing device communicatively coupled to a memory having executable instructions stored therein which cause the device to implement a method of encryption, the method comprising: receiving an input data string for encryption at the processing device (See De Maine Col. 91 Lines 67-73); determining an order in which to query the presence of each of 2^n different configurations of n bits within an input data string (See De Maine Col. 91 Lines 67-74, 256 Byte Table); generating an order code associated with the determined order (See De Maine Col. 92 Lines 5-10, Type 2 codes), the respective order of bit combinations of the order code defining control code segments (Type 2 code) (See De Maine Col. 101 Lines 52-68 and Col. 102 Lines 11-15); generating a position code using the order code in cooperation with a position code routine (SANPAKC Type 2) associated with the order code to determine positions of each of the 2^n different configurations of n bits in an input data string by comparing the 2^n different configurations of the input data string with a first one of the control code segments of the order code to identify the 2^n different configurations of the input data string which correspond to the first one of the control code segments (See De Maine Col. 101 Lines 10-74), comparing additional ones of the control code segments in a serial fashion to previously unidentified ones of the 2^n different configurations of the data string (See De Maine

Col. 102 Lines 11-50) correspondences to the control code segment comparisons resulting in output values dictated by the position code routine which defines the generated position code (See De Maine Col. 92 Lines 31-39, Bit Map); and combining the order code and the generated position code to form an encrypted data string (See De Maine Col. 92 Lines 40-44) (See also De Maine Col. 101 Paragraph 3 – Col. 103 Paragraph 1), however, De Maine did not specifically disclose providing a control code index that is defined prior to encryption at the processing device, the control code index including a plurality of control codes each defining respective orders of n bit combinations of binary data, or identifying a control code associated with the determined order code using the control code index.

Cellier teaches that in a coding method which involves the use of a coding table, a table dictionary (control code index) including a plurality of tables should be incorporated and table select (control code), for identifying which table was used in the coding method, should be chosen from the index and included with the encoded data (See Cellier Col. 4 Line 46 – Col. 5 Line 55 and Col. 13 Lines 24-33).

Witten teaches that in a compression system which uses frequency analysis to adapt to the input text for optimal compression, an initial model, perhaps randomly selected, should be used as a key in order to secure the data being compressed from being decompressed without knowing the initial model, or key (See Witten Section 7).

It would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of Cellier in the coding system of De Maine by providing a dictionary of LEXICON tables (See De Maine Col. 91 Lines 67-74) which are identified using a

table select (control code) and including the table select corresponding to the determined LEXICON table with the encoded data in order to allow the decoder to identify which LEXICON table was used for encoding. This would have been obvious because the ordinary person skilled in the art would have been motivated to provide a highly efficient and compact way of mapping the statistics of the input string in order to identify the proper LEXICON table to the decoder.

It further would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of Witten in the system of De Maine by using the table select as a key, which is kept secret. This would have been obvious because the ordinary person skilled in the art would have been motivated to secure the compressed data against illicit decompression.

Regarding claim 21, De Maine disclosed a method for encrypting an input data string including a plurality of bits of binary data (See De Maine Col. 2 Paragraph 1), the method comprising: receiving an input data string for encryption (See De Maine Col. 91 Lines 67-74); determining an order in which to query the presence of each of 2^n different configurations of n bits within an input data string (See De Maine Col. 91 Lines 67-74, 256 Byte Table); generating an order code associated with the determined order (See De Maine Col. 92 Lines 5-10, Type 2 codes), the respective order of bit combinations of the order code defining control code segments (Type 2 code) (See De Maine Col. 101 Lines 52-68 and Col. 102 Lines 11-15); generating a position code using the order code in cooperation with a position code routine associated with the order code to determine positions of each of the 2^n different configurations of n bits in an input data string by comparing the 2^n different configurations of the input data string with a first

one of the control code segments of the order code to identify the 2^n different configurations of the input data string which correspond to the first one of the control code segments (See De Maine Col. 101 Lines 10-74), comparing additional ones of the control code segments in a serial fashion to previously unidentified ones of the 2^n different configurations of the data string (See De Maine Col. 102 Lines 11-50) correspondences to the control code segment comparisons resulting in output values dictated by the position code routine which defines the generated position code (See De Maine Col. 92 Lines 31-39, Bit Map); and combining the order code and the generated position code to form an encrypted data string (See De Maine Col. 92 Lines 40-44), however, De Maine did not specifically disclose providing a control code index that is defined prior to encryption at the processing device, the control code index including a plurality of control codes each defining respective orders of n bit combinations of binary data, or identifying a control code associated with the determined order code using the control code index.

Cellier teaches that in a coding method which involves the use of a coding table, a table dictionary (control code index) including a plurality of tables should be incorporated and table select (control code), for identifying which table was used in the coding method, should be chosen from the index and included with the encoded data (See Cellier Col. 4 Line 46 – Col. 5 Line 55 and Col. 13 Lines 24-33).

Witten teaches that in a compression system which uses frequency analysis to adapt to the input text for optimal compression, an initial model, perhaps randomly selected, should be

used as a key in order to secure the data being compressed from being decompressed without knowing the initial model, or key (See Witten Section 7).

It would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of Cellier in the coding system of De Maine by providing a dictionary of LEXICON tables (See De Maine Col. 91 Lines 67-74) which are identified using a table select (control code) and including the table select corresponding to the determined LEXICON table with the encoded data in order to allow the decoder to identify which LEXICON table was used for encoding. This would have been obvious because the ordinary person skilled in the art would have been motivated to provide a highly efficient and compact way of mapping the statistics of the input string in order to identify the proper LEXICON table to the decoder.

It further would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of Witten in the system of De Maine by using the table select as a key, which is kept secret. This would have been obvious because the ordinary person skilled in the art would have been motivated to secure the compressed data against illicit decompression.

Regarding claim 23, De Maine disclosed a computer readable medium including computer program instructions that cause a computer to implement a method of encrypting an input data string, including a plurality of bits of binary data (See De Maine Col. 2 Paragraph 1), the method comprising: receiving an input data string for encryption (See De Maine Col. 91 Lines 67-74); determining an order in which to query the presence of each of 2^n different configurations of n bits within an input data string (See De Maine Col. 91 Lines 67-74, 256 Byte

Table); generating an order code associated with the determined order (See De Maine Col. 92 Lines 5-10, Type 2 codes), the respective order of bit combinations of the order code defining control code segments (Type 2 code) (See De Maine Col. 101 Lines 52-68 and Col. 102 Lines 11-15); generating a position code using the order code in cooperation with a position code routine associated with the order code to determine positions of each of the 2^n different configurations of n bits in an input data string by comparing the 2^n different configurations of the input data string with a first one of the control code segments of the order code to identify the 2^n different configurations of the input data string which correspond to the first one of the control code segments (See De Maine Col. 101 Lines 10-74), comparing additional ones of the control code segments in a serial fashion to previously unidentified ones of the 2^n different configurations of the data string (See De Maine Col. 102 Lines 11-50) correspondences to the control code segment comparisons resulting in output values dictated by the position code routine which defines the generated position code (See De Maine Col. 92 Lines 31-39, Bit Map); and combining the order code and the generated position code to form an encrypted data string (See De Maine Col. 92 Lines 40-44), however, De Maine did not specifically disclose providing a control code index that is defined prior to encryption at the processing device, the control code index including a plurality of control codes each defining respective orders of n bit combinations of binary data, or identifying a control code associated with the determined order code using the control code index.

Cellier teaches that in a coding method which involves the use of a coding table, a table dictionary (control code index) including a plurality of tables should be incorporated and table select (control code), for identifying which table was used in the coding method, should be

chosen from the index and included with the encoded data (See Cellier Col. 4 Line 46 – Col. 5 Line 55 and Col. 13 Lines 24-33).

Witten teaches that in a compression system which uses frequency analysis to adapt to the input text for optimal compression, an initial model, perhaps randomly selected, should be used as a key in order to secure the data being compressed from being decompressed without knowing the initial model, or key (See Witten Section 7).

It would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of Cellier in the coding system of De Maine by providing a dictionary of LEXICON tables (See De Maine Col. 91 Lines 67-74) which are identified using a table select (control code) and including the table select corresponding to the determined LEXICON table with the encoded data in order to allow the decoder to identify which LEXICON table was used for encoding. This would have been obvious because the ordinary person skilled in the art would have been motivated to provide a highly efficient and compact way of mapping the statistics of the input string in order to identify the proper LEXICON table to the decoder.

It further would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of Witten in the system of De Maine by using the table select as a key, which is kept secret. This would have been obvious because the ordinary person skilled in the art would have been motivated to secure the compressed data against illicit decompression.

Regarding claim 62, De Maine disclosed an electronic device for encrypting an input data string, including a plurality of bits of binary data, comprising: a processor configured to receive

an input data string for encryption (See De Maine Col. 91 Lines 67-73); determining upon reception of the input data string, an order in which to query the presence of each of two 2n different configurations of n bits within an input data string (See De Maine Col. 91 Lines 67-74, 256 Byte Table), and generates an order code associated with the determined order (See De Maine Col. 92 Lines 5-10, Type 2 codes), the respective order of bit combinations of the order code defining control code segments (Type 2 code) (See De Maine Col. 101 Lines 52-68 and Col. 102 Lines 11-15), the processor generating a position code, using the order code in cooperation with a position code routine associated with the order code to determine positions of each of the two 2n different configurations of n bits in the input data string by comparing the 2n different configurations of the input data string with a first one of the control code segments of the order code to identify the 2^n different configurations of the input data string which correspond to the first one of the control code segments (See De Maine Col. 101 Lines 10-74), comparing additional ones of the control code segments in a serial fashion to previously unidentified ones of the 2^n different configurations of the data string (See De Maine Col. 102 Lines 11-50) correspondences to the control code segment comparisons resulting in output values dictated by the position code routine which defines the generated position code (See De Maine Col. 92 Lines 31-39, Bit Map) to combine the order code and the generated position code to form an encrypted data string (See De Maine Col. 92 Lines 40-44), however, De Maine did not specifically disclose providing a control code index that is defined prior to encryption at the processing device, the control code index including a plurality of control codes each defining respective orders of n bit combinations of binary data, or identifying a control code associated with the determined order code using the control code index.

Cellier teaches that in a coding method which involves the use of a coding table, a table dictionary (control code index) including a plurality of tables should be incorporated and table select (control code), for identifying which table was used in the coding method, should be chosen from the index and included with the encoded data (See Cellier Col. 4 Line 46 – Col. 5 Line 55 and Col. 13 Lines 24-33).

Witten teaches that in a compression system which uses frequency analysis to adapt to the input text for optimal compression, an initial model, perhaps randomly selected, should be used as a key in order to secure the data being compressed from being decompressed without knowing the initial model, or key (See Witten Section 7).

It would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of Cellier in the coding system of De Maine by providing a dictionary of LEXICON tables (See De Maine Col. 91 Lines 67-74) which are identified using a table select (control code) and including the table select corresponding to the determined LEXICON table with the encoded data in order to allow the decoder to identify which LEXICON table was used for encoding. This would have been obvious because the ordinary person skilled in the art would have been motivated to provide a highly efficient and compact way of mapping the statistics of the input string in order to identify the proper LEXICON table to the decoder.

It further would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of Witten in the system of De Maine by using the table select

as a key, which is kept secret. This would have been obvious because the ordinary person skilled in the art would have been motivated to secure the compressed data against illicit decompression.

Regarding claims 3 and 25 De Maine, Cellier, and Witten disclosed determining an order comprises selecting a predetermined order (See De Maine Col. 91, 256 Byte Table and the rejection of claim 1 above).

Regarding claims 5, 22, and 26, De Maine, Cellier, and Witten disclosed dividing the input data string into a plurality of blocks of data (See De Maine Col. 92 Lines 31-38).

Regarding claim 8, and 30, De Maine, Cellier, and Witten disclosed generating a plurality of block codes associated with a plurality of blocks of data, each block code indicating the number of bits within the associated block of data (See De Maine Col. 101 Lines 45-52).

Regarding claim 9, and 31, De Maine, Cellier, and Witten disclosed combining the each of the plurality of block codes with the control code and the position code for the associated block of data (See De Maine Col. 101 Lines 45-52 and the rejection of claim 1 above).

Regarding claim 10, and 32, De Maine, Cellier, and Witten disclosed that determining an order further comprises determining an order based on the frequencies of the 2^n combinations of the n bits of the input data string (See De Maine Col. 101 Lines 20-25).

Regarding claims 29, and 50, De Maine, Cellier, and Witten disclosed that the computer readable code for determining an order further comprises computer readable code for determining a first order associated with a first block of data and determining a second order

associated with a second block of data wherein the first order is different than the second order (See De Maine Col. 91 Lines 67-74).

Regarding claim 33, De Maine, Cellier, and Witten disclosed that the computer readable code for determining an order further comprises computer readable code for determining an order in which to query the presence of each of 2^n different configurations of n bits within the input data string based on an analysis of the input data (See De Maine Col. 91 Lines 67-74).

Regarding claims 34 and 48, De Maine, Cellier, and Witten disclosed randomly selecting the control code via a random number generator.

Regarding claims 35, and 49, De Maine, Cellier, and Witten disclosed generating the control code based on a rule set (See the rejection of claim 1 above and De Maine Col. 91 Lines 67-74).

Regarding claims 36 and 51, De Maine, Cellier, and Witten disclosed determining whether to compress the input data string simultaneously as it is encrypted (See De Maine Col. 101 Lines 20-28).

Regarding claims 37 and 52, De Maine, Cellier, and Witten disclosed dividing the input data string into n bit sequences (See De Maine Col. 91 Lines 67-74); comparing each of the 2^n different configurations of n bits with each of the n bit sequences (See De Maine Col. 91 Lines 67-74); determining the frequency of each of the 2^n different configurations appearing in the input data string (See De Maine Col. 91 Lines 67-74); determining whether a specific relationship exists between values of the frequencies of each of the individual 2^n different

configurations appearing in the input date string wherein the existence of the specific relationship is indicative of the presence of a characteristic within the input data string and wherein the presence of the characteristic determines that the input data string is compressed simultaneously as it is encrypted (See De Maine Col. 101 Lines 20-25); selecting a first position code routine associated with the determined order when the specific relationship exists, the first position code routine being operable to encrypt and compress the input data string (See De Maine Col. 101 Lines 20-25 and Col. 92 Paragraphs 1-2); and selecting a second position code routine associated with the determined order when the specific relationship does not exist, the second position code routine being operable to encrypt the input data string without any compression (See De Maine Col. 101 Lines 20-25 and Col. 92 Paragraphs 1-2).

Regarding claims 38 and 53, De Maine, Cellier, and Witten disclosed that the determining the order in which to query the presence of each of 2^n different configurations of n bits of binary data within an input data string comprises computer readable code for determining the order in which to query the presence of each of 2^2 different configurations of 2 bits within an input data string (See De Maine Col. 91 Lines 47-48).

Regarding claims 39 and 54, De Maine, Cellier, and Witten disclosed dividing the input data string into n bit sequences (See De Maine Col. 91 Lines 67-74); comparing each of the 2^n different configuration of n bits of binary data with each of the n bit sequences of the input data string (See De Maine Col. 91 Lines 67-74); determining a first number representative of the number of times the most frequently occurring 2^n configuration appears in the input string; determining a second number representative of the number of times the second most frequently

occurring 2^n configuration appears in the input string; determining a third number representative of the number of times the third most frequently occurring 2^n configuration appears in the input string determining a fourth number representative of the number of times the fourth most frequently occurring 2^n configuration appears in the input string (See De Maine Col. 91 Lines 67-74); determining an order in which to query the presence of each of 2n different configurations of n bits within the input data string based on a sequence of 2 bit combinations, the determined order beginning with a most occurring frequency and ending with a least occurring frequency (See De Maine Col. 92 Paragraph 1) selecting a first position code routine associated with the determined order when the first number is greater than the sum of the third number and the fourth number, the first position code routine being operable to encrypt and compress the input data string (See De Maine Col. 92 Paragraphs 1-2 and Col. 101 Lines 20-27); and selecting a second position code routine associated with the determined order when the first number is not greater than the sum of the third number and the fourth number, the second position code routine being operable to encrypt the input data string without any compression (See De Maine Col. 92 Paragraphs 1-2 and Col. 101 Lines 20-27).

Regarding claims 40 and 55, De Maine, Cellier, and Witten disclosed that identifying a control code associated with the determined order, further comprises: identifying a first control code associated with the determined order when the first position code routine is selected; and identifying a second control code associated with the determined order when the second position code routine is selected wherein the first control code is different than the second control code (See De Maine Col. 92 Paragraphs 1-2).

Regarding claims 44 and 59, De Maine, Cellier, and Witten disclosed selecting a default order (See De Maine Col. 91 Lines 67-74 and the rejection of claim 1 above).

Regarding claims 45 and 60, De Maine, Cellier, and Witten disclosed determining an order based on the relative frequencies of the combinations of n bits (See De Maine Col. 91 Lines 67-74).

Regarding claim 47, De Maine, Cellier, and Witten disclosed determining the order based on an analysis of the input data string (See De Maine Col. 91 Lines 67-74).

Claims 6-7, and 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Maine, Cellier, and Witten as applied to claims 5, and 26 respectively, and further in view of Shimizu et al. (US Patent Number 6,772,343) hereinafter referred to as Shimizu.

De Maine, Cellier, and Witten disclosed blocking the input data into block sizes of a certain range (See De Maine Col. 92 Lines 31-38) but failed to disclose determining the size of the blocks randomly or according to a rule set.

Shimizu teaches that in a block encoding system, generating each block size randomly makes illicit access of the data more difficult and makes the cryptosystem more robust (See Shimizu Col. 5 Lines 9-18). Shimizu further teaches that the random sizes are generated mathematically using a seed (See Shimizu Col. 15 Paragraphs 3-7).

It would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of Shimizu in the invention of De Maine, Cellier, and Witten to mathematically generate random block lengths. This would have been obvious because the

ordinary person skilled in the art would have been motivated to provide the added security of random block lengths to the compressed data.

Claims 41-42, and 56-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Maine, Cellier, and Witten as applied to claim 1 above, and further in view of Weiss (US Patent Number 5,479,512).

De Maine, Cellier, and Witten disclosed compressing input data (See De Maine Cols. 91-92), but failed to disclose re-encrypting the data after the compression was performed.

Weiss teaches that after compression is performed, the compressed data should be XORed with a key, in small blocks at a time (See Weiss Col. 5 Paragraphs 4-5 and Col. 6 Paragraph 3 and Fig. 3A).

It would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of Weiss in the compression system of De Maine, Cellier, and Witten by XORing the coded data with a key in small blocks at a time. This would have been obvious because the ordinary person skilled in the art would have been motivated to protect the data from unauthorized observing.

Claims 41, 43, 56, and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Maine, Cellier, and Witten as applied to claim 1 above, and further in view of Butler et al. (US Patent Number 5,861,887) hereinafter referred to as Butler.

De Maine, Cellier, and Witten disclosed compressing input data (See De Maine Cols. 91-92), but failed to disclose re-encrypting the data after compression was performed.

Butler teaches that compression should be repeated as many times as necessary in order to make the data being compressed sufficiently small (See Butler Col. 3 Paragraph 2).

It would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of Butler in the compression system of De Maine, Cellier, and Witten by repeating the compression on the coded output as many times as necessary to get the output to be sufficiently small. This would have been obvious because the ordinary person skilled in the art would have been motivated to provide more efficient storage of the audio data.

Conclusion

Claims 1, 3, 5-10, 21-23, 25-45, 47-60, and 62 have been rejected.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew T. Henning whose telephone number is (571) 272-3790. The examiner can normally be reached on M-F 8-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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